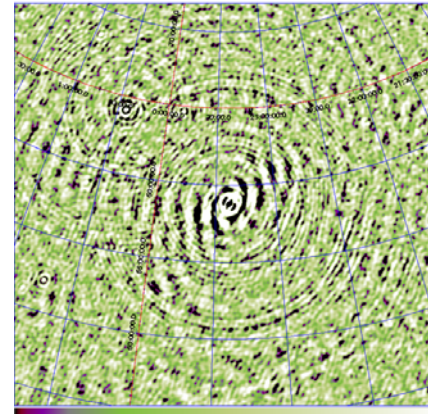




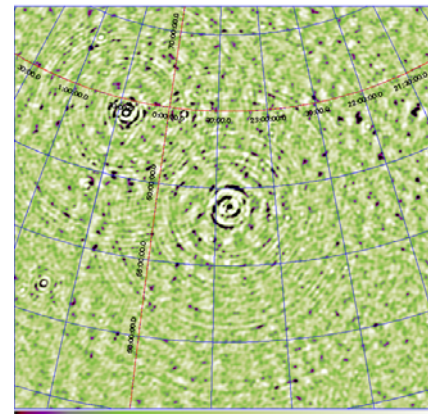
6.3.3 Source Parameterization

Ronald Nijboer
ASTRON

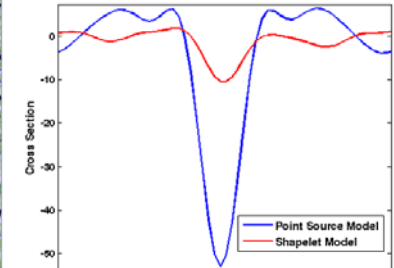
- High dynamic range needs accurate description of extended sources
- Automatic, (near-) real time processing requires computational efficiency
- Shapelet techniques might be a solution



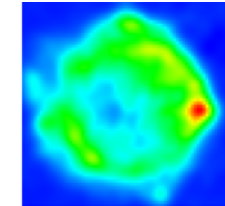
Point Source Model



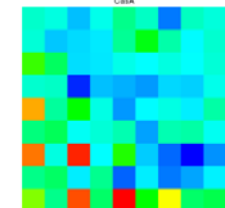
Shapelet Model



Cross Section

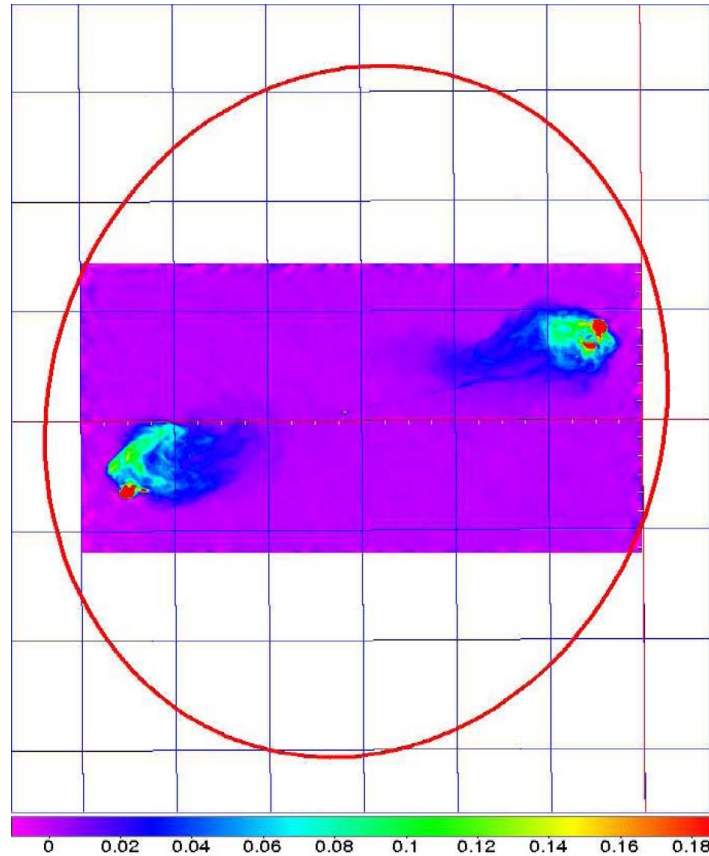


CSA



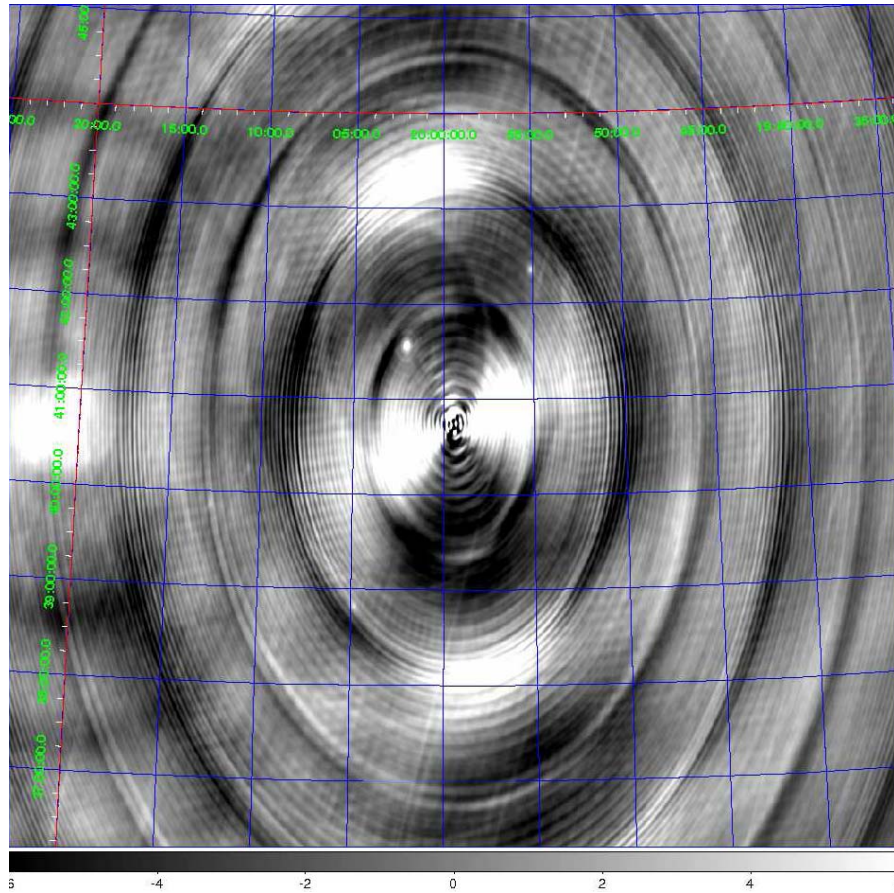
Coefficients Model

Result by Sarod Yatawatta



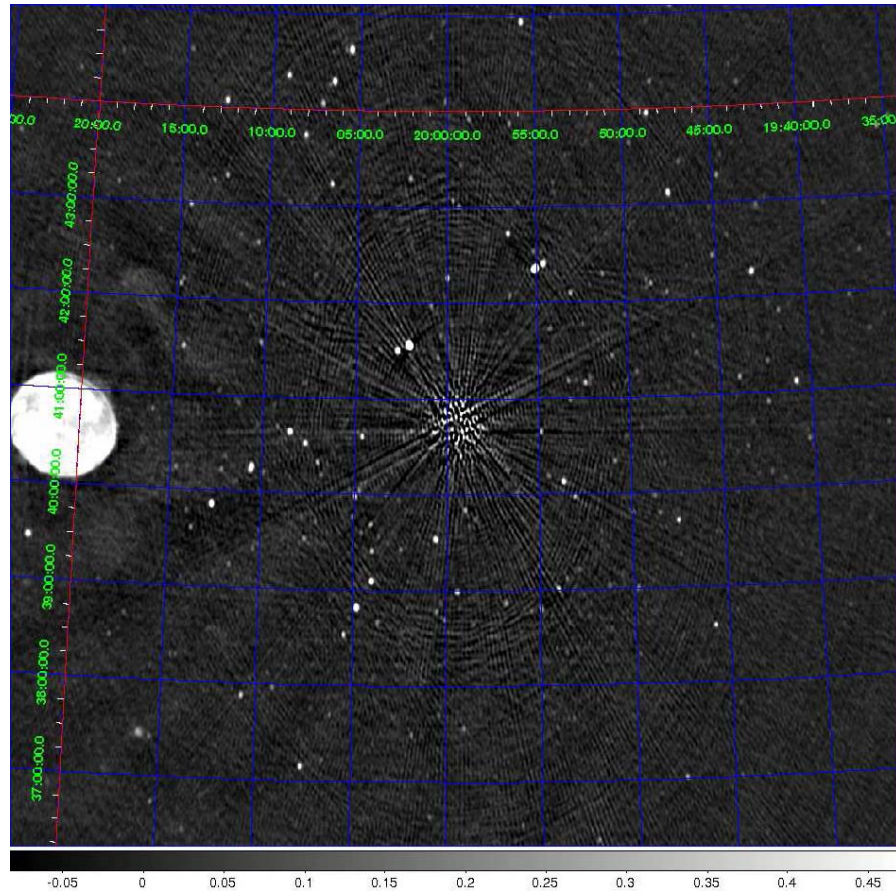
Cygnus A: VLA 4.5 GHz
WSRT PSF at 140 MHz

Result by Sarod Yatawatta



Peak ≈ 10000 Jy, Noise ≈ 1000 mJy, (140 MHz)

Result by Sarod Yatawatta



Peak ≈ 10000 Jy, Noise I ≈ 20 mJy,
 Q,U,V ≈ 5 mJy; (116.8-172 MHz)

Result by Sarod Yatawatta

1. Implement a Global Sky Model (GSM) based on new models for extended sources, e.g. shapelet models
 2. Apply these source models to LOFAR / WSRT / APERTIF fields to investigate their use and limitations
- The GSM will be a stand-alone Python module. It will be connected to the MeqTrees package for application on LOFAR and WSRT / APERTIF test fields.

- Start month: 13 (instead of 18)
- Finish month: 28 (unchanged)
- Total effort
 - ASTRON; 9 man months
- Manpower: Oleg Smirnov, George Heald